

Request for Expressions of interest in RSSB research project COF-INT Inerter Prototype Development

RSSB are seeking to further develop a recent project looking at the benefits of inertance-integrated layouts in the primary lateral suspension of railway vehicles to reduce track damage and improve ride comfort. The inerter is in commercial use in motorsport, but there have only been theoretical studies of possible benefits for railway vehicles so far. A preliminary research project (RSSB Project COF-UOH-20) has developed inerter models in MATLAB, VAMPIRE and SIMPACK and the potential benefit of their use has been quantified.

This project aims to build on the previous study and develop and test the design of a physical railway inerter. Organisations with capabilities and experience in this area are invited to express their interest and experience in this activity in advance of the tender process.

Scope of work:

- Simulation and modelling – Extension of the previous modelling and simulation work to identify the potential benefits for a wider range of speeds and wheel conicities.
- Prototype development – Development of a selection of inerter prototype designs that can deliver the modelled benefits, considering physical restrictions (weight and size).
- Prototype verification – Modelling of the prototype to verify performance taking into consideration physical parameters.
- Implementation planning – Detailed plan of next steps, covering how the physical railway inerter can be tested (considering small- and full-scale laboratory testing and on-track vehicle testing).

Requested information in response:

We are inviting suppliers to provide us a short summary of their capabilities and experience in this subject area to help us deliver a successful project. Taking into account the envisaged scope of work summary we would be pleased to receive a summary response (around 4 pages).

Your comments are also welcome on our current indicative budget for this work of around £100k to £150k.